

# USER MANUAL

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## MODELS 546 and 547

V.35 Data Line  
Surge Protectors



**PE PATTON**  
**Electronics Co.**



*An ISO-9001  
Certified Company*

Part# 07M546-C  
Doc# 074290UC  
Revised 10/29/98

SALES OFFICE  
(301) 975-1000  
TECHNICAL SUPPORT  
(301) 975-1007  
<http://www.patton.com>

## 1.0 WARRANTY INFORMATION

**Patton Electronics** warrants Model 546 and Model 547 components to be free from defects, and will—at our option—repair or replace the product should it fail within one year from the first date of shipment.

This warranty is limited to defects in workmanship or materials, and does not cover customer damage, abuse or unauthorized modification. If this product fails or does not perform as warranted, your sole recourse shall be repair or replacement as described above. Under no condition shall **Patton Electronics** be liable for any damages incurred by the use of this product. These damages include, but are not limited to, the following: lost profits, lost savings and incidental or consequential damages arising from the use of or inability to use this product. **Patton Electronics** specifically disclaims all other warranties, expressed or implied, and the installation or use of this product shall be deemed an acceptance of these terms by the user.

### 1.1 SERVICE

All warranty and non-warranty repairs must be returned freight prepaid and insured to Patton Electronics. All returns must have a Return Materials Authorization number on the outside of the shipping container.

This number may be obtained from Patton Electronics Technical Service at: **(301) 975-1007**; <http://www.patton.com>: or, [support@patton.com](mailto:support@patton.com).

**Note:** Packages received without an RMA number will not be accepted.

Patton Electronics' technical staff is also available to answer any questions that might arise concerning the installation or use of your Model 546 or Model 547. Technical Service hours: **8AM to 5PM EST, Monday through Friday.**

### 1.2 CE NOTICE

The CE symbol on your Patton Electronics equipment indicates that it is in compliance with the Electromagnetic Compatibility (EMC) directive and the Low Voltage Directive (LVD) of the Union European (EU). A Certificate of Compliance is available by contacting Technical Support.

## 2.0 GENERAL INFORMATION

Thank you for your purchase of this Patton Electronics product. This product has been thoroughly inspected and tested and is warranted for One Year parts and labor. If any questions or problems arise during installation or use of this product, please do not hesitate to contact Patton Electronics Technical Support at (301) 975-1007.

### 2.1 FEATURES

- Bidirectional transient protection
- **Model 546:** 1 male M/34 and 1 female M/34 connector
- **Model 547:** 1 male M/34 and 1 LFH60 male connector
- Supports data rates up to 20 Mbps
- 1500 Watts of self-resetting surge capacity
- Diverts surges to chassis ground through a braided metal ground strap
- Complies with IEC 801-5, Level 3, 2kV (surge)
- Failsafe design guards equipment in case of overvoltage
- Made in the U.S.A.

### 2.2 DESCRIPTION

**The Patton Model 546 and Model 547** data line surge protector guards V.35 data ports against damage and data loss due to transient surges. Three versions are available. Model 546MF protects 19 lines, Model 546/34MF protects all 34 lines, and Model 547MM protects 18 lines. Whether due to nearby lightning strikes, electric motors, florescent lights or the normal operation of AC power protection equipment, data line transients can be hazardous to V.35 hardware. The Model 546 and the Model 547 protectors are equipped with a heavy duty braided metal strap to shunt harmful overvoltages safely to ground.

The Model 546 and Model 547 surge protectors are CE marked for EMC directive 89/336/EEC and IEC 801-5.

**WARNING:** Should your equipment or building be subject to direct lightning strike, this product will **not** provide complete protection.

## 4.0 INSTALLATION

There are 4 steps to installing the Patton Models 546 and 547.

**NOTE:** Failure to follow these instructions could render the current limiting feature inoperable. If you have any questions, contact us at: **(301) 975-1007**; <http://www.patton.com>; or, [support@patton.com](mailto:support@patton.com). Read the relevant section(s) of your manufacturer's user manual before beginning any work.

### Model 546

1. Turn off power to your V.35 device and disconnect the power cord(s) from the wall outlet(s).
2. Unplug the existing connection between the V.35 cable and your equipment.
3. Install the Model 546 between your equipment and your cable.
4. Connect the metal ground strap to your equipment's ground.

### Model 547

1. Turn off power to the router (or other device) and the network termination equipment and disconnect the power cord(s) from the wall outlet(s).
2. Unplug any existing connection between the V.35 cable and your equipment.
3. Plug the LFH60 to the router(or other device) and the V.35 (M/34) to the network termination equipment.
4. Connect the metal ground strap to the equipment's ground.

**WARNING!** The Model 546 and the Model 547 are secondary devices, and are designed for inside use only. Moreover, do not attempt to connect these surge protectors during a lightning storm. Patton Electronics Company accepts no liability for damage or injury associated with the use of these products. The protected device should also have an AC suppression device to prevent transients from entering the system via the incoming AC power connection. (These transients also can show up as failures on the communication link.)

## APPENDIX A

### MODEL 546 AND 547 SPECIFICATIONS

|                        |  |
|------------------------|--|
| <b>Electrical:</b>     | <b>546:</b> CCITT/ITU V.35<br><b>547:</b> CCITT/ITU V.35, DTE Orientation on the LFH60 connector |
| <b>Connectors:</b>     | <b>546:</b> 1 male M/34, 1 female M/34<br><b>547:</b> 1 male M/34, 1 LFH60 male                  |
| <b>Surge Capacity:</b> | 1500 Watts for 1msec, 400A (8/20 $\mu$ S pulse)  |
| <b>Approvals:</b>      | CE marked for EMS directive 89\336\EEC (ESD.EFT) Compliant with IEC 801-5 (surge)                |
| <b>Clamp Voltage:</b>  | +/- 19V/19V Differential in 500nS  |
| <b>Size:</b>           | 3" x 1.7" x .8" (7.62 x 4.318 x 20.32 cm)  |

### Model 546MF and Model 547MM

|                             |   |
|-----------------------------|---|
| <b>546 Lines Protected:</b> | 19 lines (B, C, D, E, F, H, L, M, N, P, R, S, T, U, V, W, X, Y, AA) |
| <b>547 Lines Protected:</b> | 18 lines (A, B, C, D, E, F, H, K, P, R, S, T, U, V, W, X, Y, AA)    |
| <b>Protection:</b>          | Common Mode Pin to Braid<br>Differential Line to Line               |

### Model 546/34MF

|                         |   |
|-------------------------|---|
| <b>Lines Protected:</b> | All 34 Lines  |
| <b>Protection:</b>      | Common Mode Pin to Braid<br>Differential Line to Line |

**APPENDIX B**

**MODEL 547 PIN ASSIGNMENTS**

**V.35**

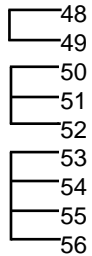
**M/34 Male**

**Signal Pin No.**

**LFH60 Male**

**Pin No. Signal**

|       |          |    |       |
|-------|----------|----|-------|
| FG    | A -----  | 46 | FG    |
| SG    | B -----  | 45 | SG    |
| RTS   | C -----  | 42 | RTS   |
| CTS   | D -----  | 35 | CTS   |
| DSR   | E -----  | 34 | DSR   |
| RLSD  | F -----  | 33 | RLSD  |
| DTR   | H -----  | 43 | DTR   |
| LT    | K -----  | 44 | LT    |
| SD+   | P -----  | 18 | SD+   |
| SD-   | S -----  | 17 | SD-   |
| RD+   | R -----  | 28 | RD+   |
| RD-   | T -----  | 27 | RD-   |
| SCTE+ | U -----  | 20 | SCTE+ |
| SCTE- | W -----  | 19 | SCTE- |
| SCR+  | V -----  | 26 | SCR+  |
| SCR-  | X -----  | 25 | SCR-  |
| SCT+  | Y -----  | 24 | SCT+  |
| SCT-  | AA ----- | 23 | SCT-  |



**NOTE:** The Patton Model 546 pin assignments have a one to one relationship (example: pin 1 connects to pin 1, pin 2 connects to pin 2, etc.)